



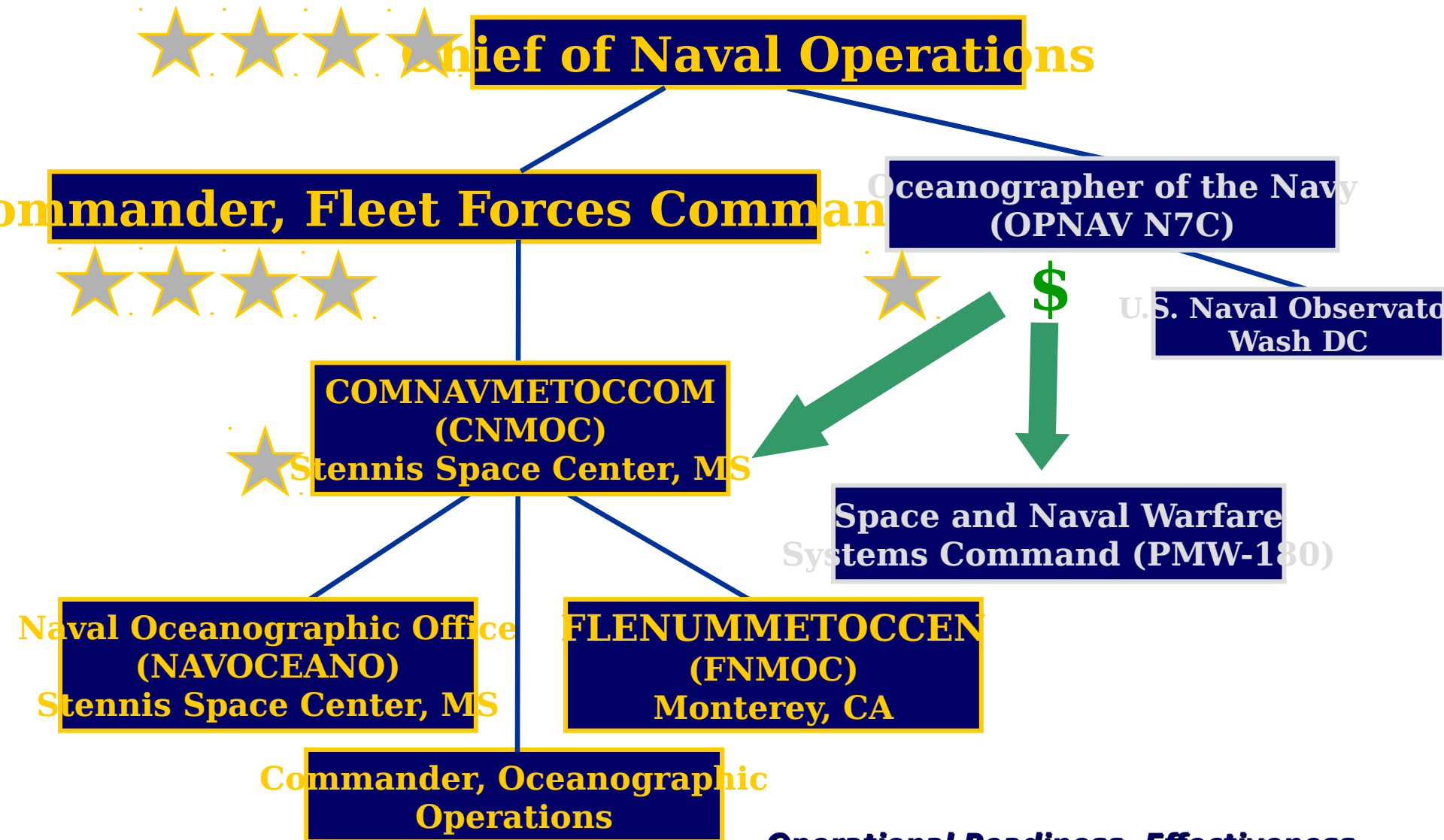
Naval Oceanography Enabling Warfighter Effectiveness



***5 December, 2005
RDML Fred Byus
Oceanographer of the Navy***



Aligned to Win within the Navy...



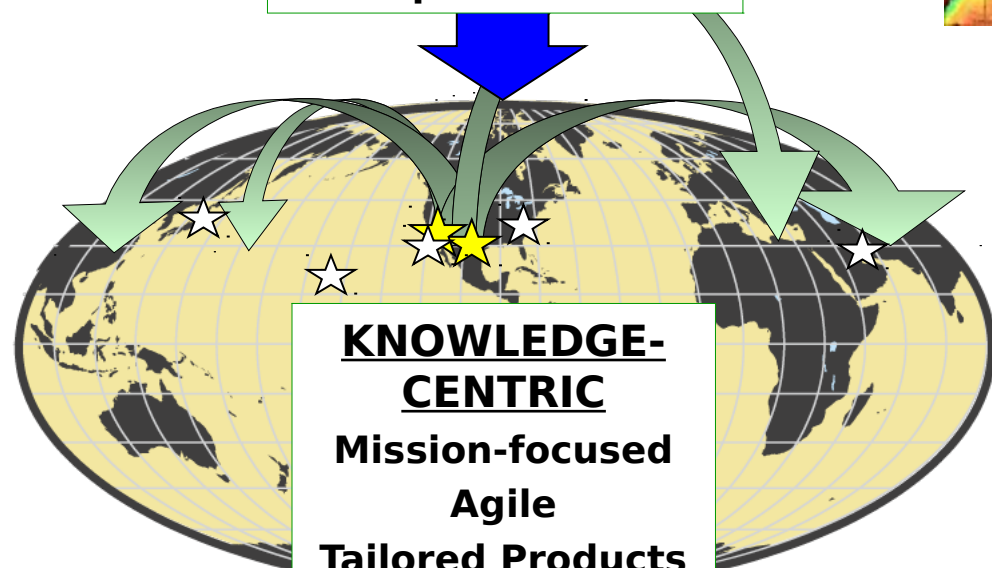


Aligned to Win

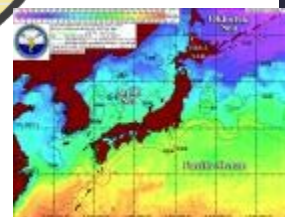
...and Naval Oceanography



GEO-CENTRIC
Stand-alone
Rigid Production
cycles
Stovepiped
products



KNOWLEDGE-CENTRIC
Mission-focused
Agile
Tailored Products
Uniform Services



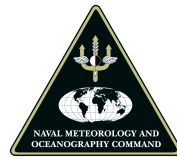
TEAM CONCEPT

- Responsive to War Fighter
- Robust reach-back capability
- Rapid Global

Operational Readiness, Effectiveness, Primacy



Focus on Warfighting



Anti-Submarine Warfare

Naval Special Warfare

Mine Warfare

ISR

***Increase Focus/
Dominant Sea Power
Readiness***

**Precise Time and
Astrometry**

Fleet Operations

***Maintain Excellence/
Environmental Understanding
Readiness***

Maritime

Aviation

***Increase Efficiency/
Safety and Readiness***



Ocean on Demand

Critical Enabler for Warfighting Effectiveness

Get the Ocean* Right

- At the right time, the right scale and the right place

Agile and Predictive...moving beyond historical databases to exploit maneuver in both space and time

Scientifically Rigorous...because the simple, easy to understand wrong answer may kill us

****Ocean: Atmosphere to the bottom of the sea floor***

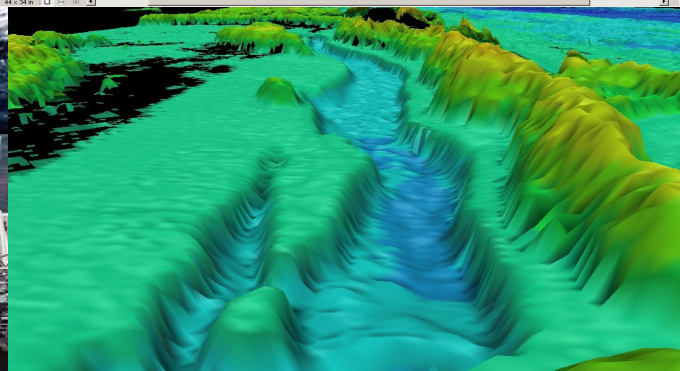
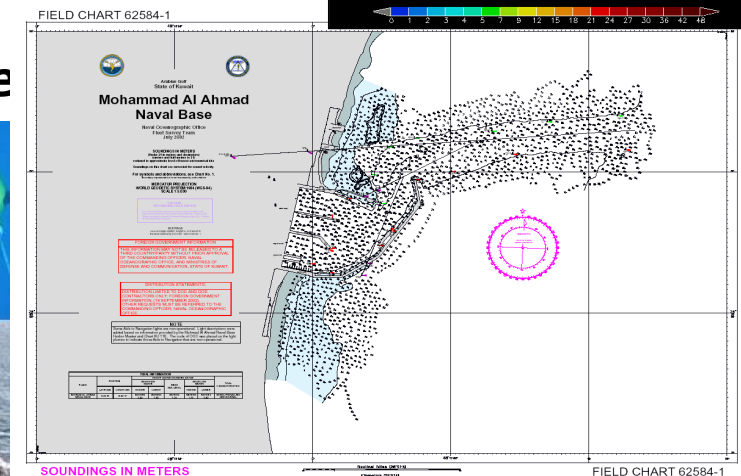
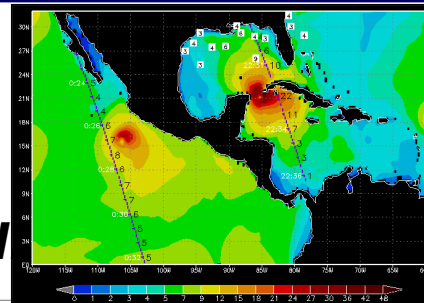
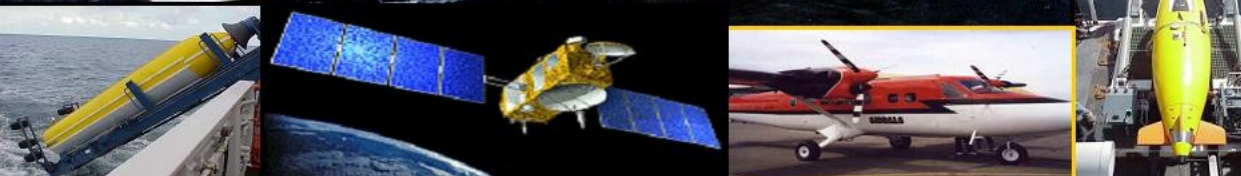


OOD - Surveying and Sensing

Foundation for all Ocean Prediction

Provides the initial and lateral boundary conditions

Enables Safe Navigation of our Fleet





OOD - Assimilation and Prediction

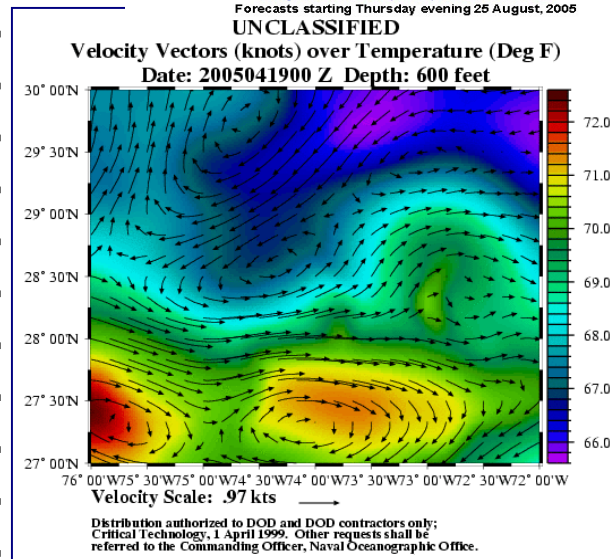
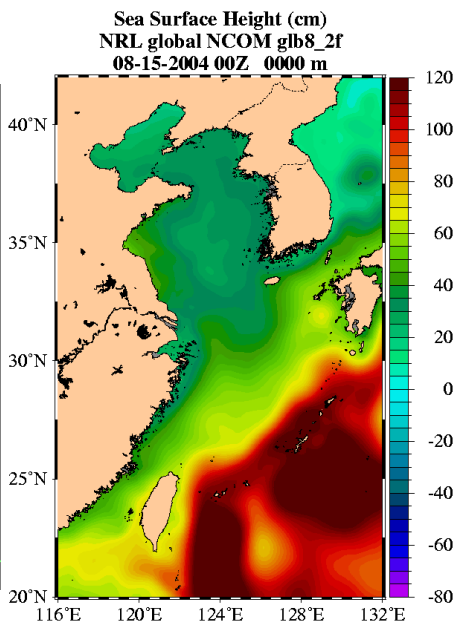
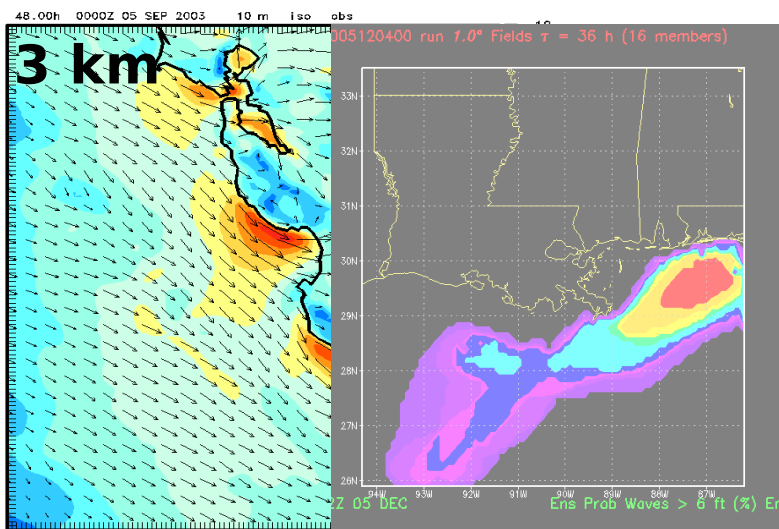
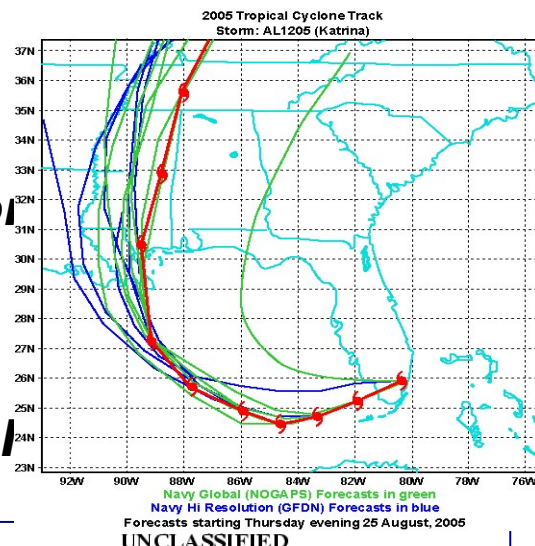
Modeling the Atmosphere to the Sea Floor

Continuous Solution

- Short range → Days → Weeks → Season
- Long term

Ensembles

- Develop the right branches and sequel



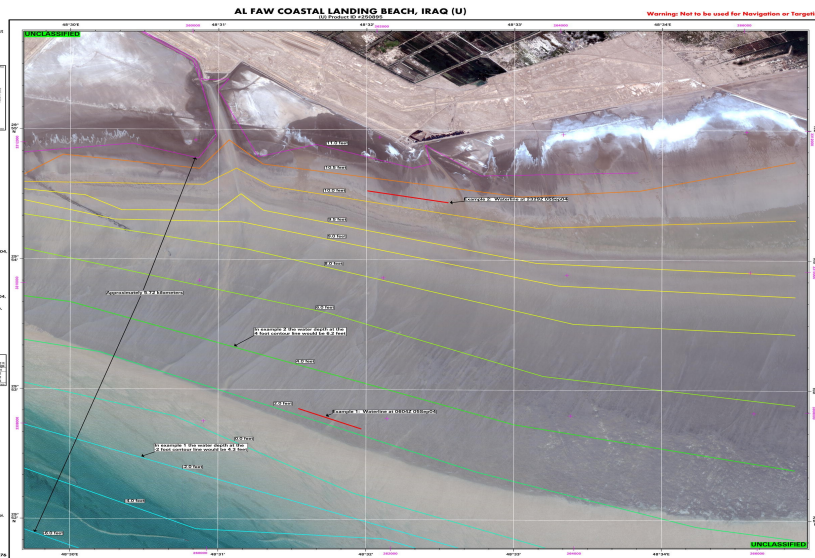
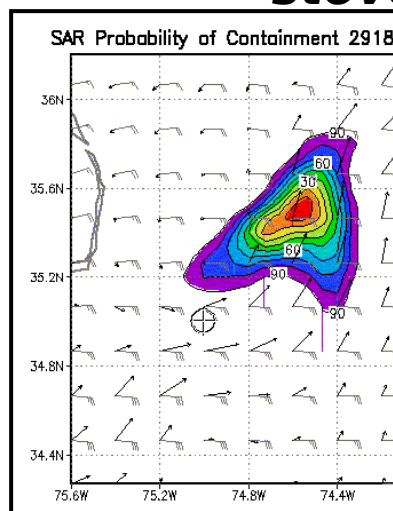


OOD - Delivery

World class expertise, working the right task, 24/7 at reach back and production centers tightly aligned with...

Small footprint of Oceanographers / AGs, high SA, engaged in warfighting

Communicate through the DoD C4I network (no stovepipes)



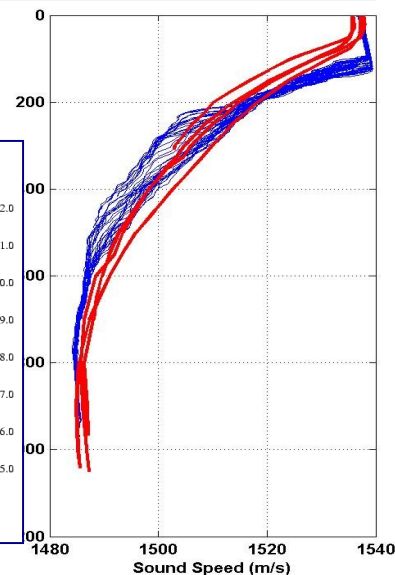
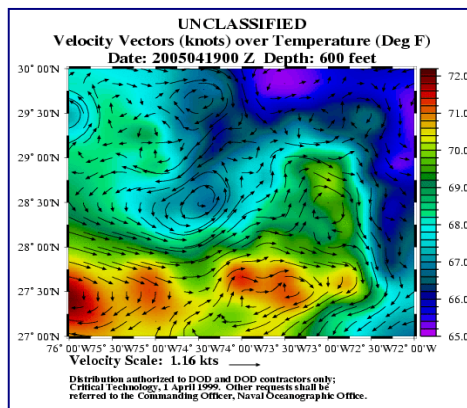
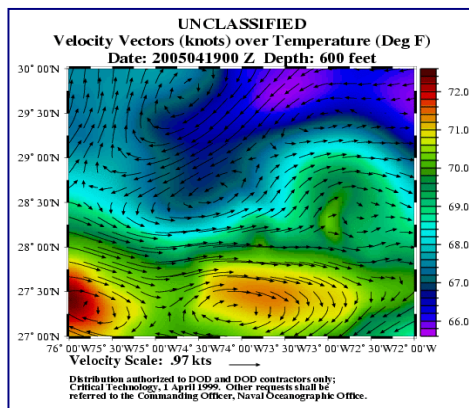
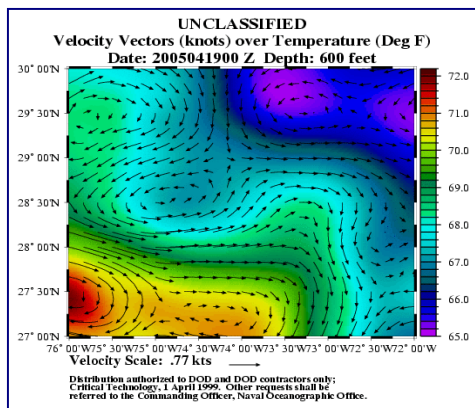
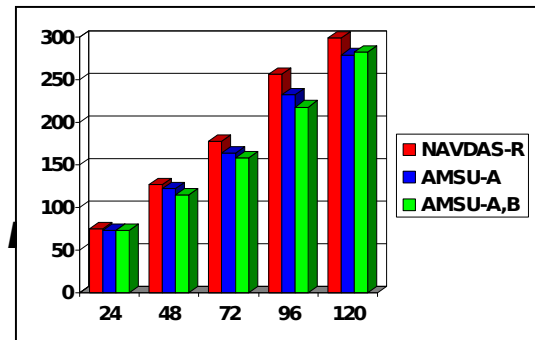


OOD - Built in Improvement

Learn by doing...repeatedly

Experiment to the right solution

***Validation and verification...improve our
and sensing strategy***

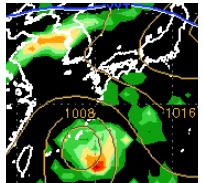




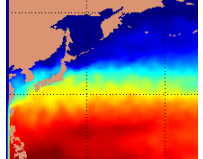
Ocean on Demand is...



An overarching enabling concept



A grand challenge



***Ocean on Demand is not:
- A done deal***



Ocean prediction is 40 years behind the atmosphere; our adversaries will not give us four decades to catch up.